Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for reducing diagnostic time of a photon detecting integrated circuit tester, the method comprising:

processing a CAD database associated with an integrated circuit; and

~~defining~~ identifying at least one CAD layer from the CAD database, the at least one CAD layer ~~identifying~~ including at least one ~~expected~~ photon emission source of the integrated circuit;

processing the at least one CAD layer to determine an expected location of a photon emission source.

2. (original) The method of claim 1 further comprising:

aligning the tester with the at least one CAD layer to correlate the tester with the at least one expected photon emission source.

3. (original) The method of claim 2 further comprising:

identifying photon emissions from the at least one expected photon emission source, the photon emissions detected by the tester during operation of the integrated circuit.

4. (original) The method of claim 3 wherein the operation of identifying photon emissions from the at least one expected photon emission source comprises receiving photon emission through the a semiconductor substrate of the integrated circuit.

5. (original) The method of claim 3 wherein the photon emissions detected by the tester during operation of the integrated circuit in a test loop.

6. (original) The method of claim 3 further comprising:

determining at least one operating characteristic of the at least one expected photon emission source.

7. (original) The method of claim 6 wherein the operation of determining the at least one operating characteristic comprises determining timing measurements employing a single photon counting technique.

8. (original) The method of claim 7 further comprising:

comparing the at least one operating characteristic of the at least one expected photon emission source with a simulation of the operating integrated circuit.

9. (original) The method of claim 8 wherein the simulation is in an optical waveform format.

10. (original) The method of claim 8 wherein the simulation is in a voltage level format.

11. (original) The method of claim 6 wherein the at least one expected emission source is at least one transistor.

12. (original) The method of claim 11 wherein the operation of comparing the operating characteristics of the least one transistor includes identifying transistors that are and are not working in accordance with the simulation.

13. (original) The method of claim 11 wherein the operation of comparing the operating characteristics of the least one transistor includes identifying emission peaks of transistors that are or are not present in the simulation.

14. (original) The method of claim 11 wherein the operation of comparing the operating characteristics of the least one transistor includes identifying differences between operating characteristics of the at least one expected photon emission source and the simulation.

15. (original) The method of claim 11 wherein the operation of determining the at least one operating characteristic of the at least one expected photon emission source comprises determining a commutation timing of the at least one transistor.

16. (original) The method of claim 1 wherein the at least one expected emission source is a MOS device.

17. (original) The method of claim 1 wherein the at least one expected emission source is a PMOS device.

18. (original) The method of claim 1 wherein the at least one expected emission source is a NMOS device.

19. (original) The method of claim 1 wherein the at least one expected emission source is a nFET.

20. (original) The method of claim 1 wherein the at least one expected emission source is a pFET.

21. (original) The method of claim 1 wherein the tester comprises an optical detector.

22. (original) The method of claim 1 wherein the tester comprises a laser scanning microscope.

23. (original) The method of claim 1 wherein the tester comprises a picosecond imaging circuit analysis detector.

24. (original) The method of claim 1 wherein the tester comprises a static emission detector.

25. (original) The method of claim 1 wherein the tester comprises a superconducting single photon detector.

Claims 26-63 are canceled.